

Supplementary Material S1. Description of the implementation programme: theoretical concepts underpinning the barriers to implementation and operationalization of the selected behaviour change techniques

|  |                                |                             |   |  |   | CAPABILITY |               |   |     |    | OPPORTUNITY |          | MOTIVATION |        |        |   |   |   |       |           |  |  |
|--|--------------------------------|-----------------------------|---|--|---|------------|---------------|---|-----|----|-------------|----------|------------|--------|--------|---|---|---|-------|-----------|--|--|
|  |                                | Behaviour Change Techniques |   |  |   | Physical   | Psychological |   |     |    | Social      | Physical | Reflective |        |        |   |   |   |       | Automatic |  |  |
| Barriers   | Constructs                     | No.                         | Label   | Intervention Content   | Functions                               | S          | K             | S | MAD | BR | SI          | EN       | B Cap      | B Cons | S/P ID | O | G | I | Reinf | EM        |  |  |
| Professionals think they screen frequently about alcohol                       | Unrealistic optimism           | 6.2                         | Social comparison                                       | Evidence that ASBI rates are low and discussion about implementation in the participants' workplace  | Education, Persuasion                   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |  |
|  |                                | 13.3                        | Incompatible beliefs                                    | Draw attention to the fact that having low ASBI rates means not practicing evidence-based medicine   |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |  |
| Reliance on clinical suspicion and/or blood tests to diagnose alcohol misuse   | Procedural knowledge           | 5.1                         | Information about health consequences                   | Explain that clinical suspicion and/or blood tests have low sensitivity for detecting alcohol misuse   | Education                               |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |  |
| Preventive health should be patients' responsibility                           | Professional role              | 6.2                         | Social comparison                                       | Group discussion so that participants who think prevention should be patients' responsibility are confronted with their peers who disagree on this point of view   | Education, Persuasion                   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |  |
|  |                                | 6.3                         | Information about others' approval                      | Evidence that both professionals approve a systematic approach to alcohol problems   |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |  |
|  |                                | 13.3                        | Incompatible beliefs                                    | Draw attention to the fact that one of the most important roles of primary care professionals is to deliver preventive health activities, and that this is not being offered routinely concerning alcohol  |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |  |
| Alcohol SBI are not effective / patients will not follow the advice to cutdown | Pessimism                      | 15.1                        | Verbal persuasion about capability                      | Tell the participants that this belief is related to experiences with patients with alcohol dependency and that they will surely feel more patient compliance if BIs are applied to hazardous and harmful drinkers   | Education, Persuasion                   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |  |
|  | Beliefs                        | 5.1                         | Information about health consequences                   | Present successfull examples drom clinical practice  |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |  |
|  |                                | 5.3                         | Information about social and environmental consequences | Evidence for the efficacy of of BIs for hazardous and harmful drinking   |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |  |
| Lack of incentives   | Rewards                        | 10.4                        | Social reward   | Periodically inform participants about the SBI rates in each PHC unit and congratulate those that show improvements  | Incentivisation, Persuasion             |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |  |
|  | Incentives                     | 2.2                         | Feedback on behaviour                                   |  |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |  |
|  |                                | 6.2                         | Social comparison                                       |  |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |  |
| Lack of support services   | Resources / material resources | 3.1                         | Social support (unspecified)                            | Inform about the existence of a team that gives support to the implementation of the project and how this team can be reached; Involve an addiction specialist from a reference center in one of the training modules  | Enablement                              |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |  |
| Lack of time   | Beliefs                        | 9.2                         | Pros and cons   | Ask participants to register the two main benefits for patients and for professionals, and the two main barriers for implementing ASBI; promote a group discussion around their answers, enlightening the benefits and use evidence for arguing against the barriers           | Education, Persuasion                   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |  |
|  |                                | 16.2                        | Imaginary reward  | After showing evidence that patients with higher alcohol consumption have more frequent appointments, ask participants to imagine delivering ASBI followed by the patient decreasing the number of appointments  |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |  |
|  | Environmental stressors        | 12.2                        | Restructuring the social environment                    | Advise to minimize time spent performing ASBI by adopting a teamwork model: the receptionist gives the AUDIT to the patient; the patient fills in the AUDIT while waiting for the appointment; if positive, BI can be delivered by the family physician or by the family nurse | Enablement, Environmental restructuring |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |  |

|                                    |   | Behaviour Change Techniques   |   |  |   | CAPABILITY |               |   |     |    | OPPORTUNITY |          | MOTIVATION |        |        |   |   |   |       |           |            |  |
|------------------------------------|---|-------------------------------|---|--|---|------------|---------------|---|-----|----|-------------|----------|------------|--------|--------|---|---|---|-------|-----------|------------|--|
|                                    |   |                               |   |  |   | Physical   | Psychological |   |     |    | Social      | Physical | Reflective |        |        |   |   |   |       | Automatic |            |  |
| Barriers                           | Constructs  | No.                           | Label   | Intervention Content   | Functions   | S          | K             | S | MAD | BR | SI          | EN       | B Cap      | B Cons | S/P ID | O | G | I | Reinf | EM        |            |  |
|                                    |   | 12.5                          | Adding objects to the environment                       | Provide participants with the AUDIT questionnaire  |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |            |  |
|                                    | Perceived behavioural control   | 15.1                          | Verbal persuasion about capability                      | Show that it is possible to integrate ASBI into the daily routine despite the limited consultation time, arguing that actually saves time in the future because reducing alcohol consumption is associated with less consultations per at-risk drinker   | Persuasion  |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |            |  |
| Lack of knowledge and/or training  | Knowledge   | 5.1                           | Information about health consequences                   | Evidence for the efficacy of of BIs for hazardous and harmful drinking in reducing physical, mental and social problems. Provide theoretical background: epidemiology, definition of standard drink and at-risk drinking, examples of alcohol-related problems, AUDIT questionnaire, guideline on alcohol  | Education, Persuasion   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |            |  |
|                                    |   | 5.3                           | Information about social and environmental consequences |  |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |            |  |
|                                    | Procedural knowledge  | 4.1                           | Instruction on how to perform a behaviour               | Participants observed and participated in ASBI training simulations of increasing difficulty. Prompt participants to practice ASBI at the workplace  | Education, Modelling, Training  |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |            |  |
|                                    |   | 6.1                           | Demonstration of the behaviour                          |  |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |            |  |
|                                    |   | 8.1                           | Behaviour practice/rehearsal                            |  |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |            |  |
|                                    |   | 8.3                           | Habit formation   |  |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |            |  |
|                                    |   | 8.7                           | Graded tasks  |  |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |            |  |
|                                    | Ability<br>Competence<br>Interpersonal skills<br>Practice<br>Skill assessment<br>Skills<br>Skills development | 4.1                           | Instruction on how to perform a behaviour               | Participants observed and participated in ASBI training simulations of increasing difficulty. Training simulations include the following topics: how to initiate screening; giving feedback to the patient and advising to cutdown; starting the conversation about alcohol; determining the stage of change; applying motivational interview techniques; negotiating goals; arranging for follow-up; re-evaluating the patient at follow-up. Prompt participants to practice ASBI at their workplaces | Education, Modelling, Training  |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |            |  |
|                                    |   | 6.1                           | Demonstration of the behaviour                          |  |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |            |  |
|                                    |   | 8.1                           | Behaviour practice / rehearsal                          |  |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |            |  |
|                                    |   | 8.3                           | Habit formation   |  |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |            |  |
|                                    |   | 8.7                           | Graded tasks  |  |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |            |  |
|                                    | Self-confidence<br>Perceived competence<br>Perceived behavioural control<br>Professional confidence           | 15.1                          | Verbal persuasion about capability                      | Discussion on ease of implementation   | Persuasion  |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |            |  |
|                                    |   | 15.3                          | Focus on past success                                   | Discussion on successful cases of implementation   |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |            |  |
|                                    | Lack of motivation/willingness to engage with drinkers  | Knowledge of task environment | 6.3   | Information about others' approval   | Evidence that both professionals approve a systematic approach to alcohol problems                                  |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           | Persuasion |  |
| Stages of change model             |   | 9.2                           | Pros and cons   | Ask participants to register the two main benefits for patients and for professionals, and the two main barriers for implementing ASBI; promote a group discussion around their answers, enlightening the benefits and use evidence for arguing against the barriers   | Persuasion  |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |            |  |
|                                    |   |                               |   |  |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |            |  |
| Stability of intentions            |   | 2.2                           | Feedback on behaviour                                   | Periodically inform participants about the SBI rates in each   | Incentivisation, Persuasion   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |            |  |
|                                    | 6.2   | Social comparisons            | PHC unit and congratulate those that                    |  |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |            |  |
|                                    |   | 10.4                          | Social reward   | show improvements  |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |            |  |
| Patients' misbeliefs about alcohol | Professional confidence<br>Self-confidence<br>Perceived behavioural control                                   | 15.1                          | Verbal persuasion about capability                      | Discussion on the ease of how to inform patients about their misbeliefs about alcohol  | Persuasion  |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |            |  |
| Lack of structured action protocol | Professional boundaries   | 4.1                           | Instruction on how to perform a behaviour               | Instruction on how to implement ASBI using a teamwork model involving doctors, nurses and receptionists. Provide participants with a resource providing written instructions, the AUDIT questionnaire, patient handouts, and posters to display throughout PHC premisses   | Education, Modelling, Environmental restructuring   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |            |  |
|                                    | Resources/material resources<br>Barriers and facilitators   | 4.1                           | Instruction on how to perform a behaviour               |  |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |            |  |
|                                    |   | 12.5                          | Adding objects to the environment                       |  |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |            |  |
|                                    |   |                               | 1.2   | Problem solving  | Ask each PHC team to adapt the protocol to their needs, by identifying factors hindering implementation and to come |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |            |  |

Supplementary Material S1 (cont.). Description of the implementation programme: theoretical concepts underpinning the barriers to implementation and operationalization of the selected behaviour change techniques

|   |  |      |   |   |   | CAPABILITY |               |   |     |    | OPPORTUNITY |          | MOTIVATION |        |        |   |   |   |       |           |  |
|---|--|------|---|---|---|------------|---------------|---|-----|----|-------------|----------|------------|--------|--------|---|---|---|-------|-----------|--|
|   |  |      |   |   |   | Physical   | Psychological |   |     |    | Social      | Physical | Reflective |        |        |   |   |   |       | Automatic |  |
| Barriers  | Constructs   | No.  | Label   | Intervention Content  | Functions                                 | S          | K             | S | MAD | BR | SI          | EN       | B Cap      | B Cons | S/P ID | O | G | I | Reinf | EM        |  |
|   | Action planning  | 1.4  | Action planning   | up with solutions for overcoming them. Prompt participants to start implementing ASBI systematically  | Enablement                                |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |
| Patients do not want / would resent being asked about their alcohol consumption                                     | Knowledge of task environment  | 6.3  | Information about others' approval                      | Evidence that patients approve a systematic approach to alcohol problems  | Persuasion                                |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |
|   | Beliefs  | 4.4  | Behavioural experiments                                 | Prompt participants to practice ASBI at their workplaces and to note patients' reactions  | Education, Enablement, Persuasion         |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |
|   |  | 5.3  | Information about social and environmental consequences | Evidence that patients do not get upset when asked about alcohol use and are willing to answer the AUDIT questions  |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |
| Patients lie about alcohol use  | Beliefs  | 15.1 | Verbal persuasion about capability                      | Teel participants that they can successfully identify patients with alcohol misuse by providing evidence that the AUDIT questionnaire is able to detect excessive alcohol use even when patients underreport their drinking   | Persuasion                                |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |
| Professionals' frustration and sense of low self-efficacy with unsuccessful attempts to counsel patients to cutdown | Positive / Negative affect<br>Self-confidence<br>Self-efficacy<br>Professional confidence<br>Pessimism | 4.1  | Instruction on how to perform a behaviour               | Discussion of what is considered a "success" and what participants consider a typical patient with alcohol problems. Evidence that ASBI is for hazardous and harmful drinking patients and that they will surely feel successful with these patients. Prompt participants to describe occasions on which they felt success. Participants observed and participated in ASBI training simulations. Prompt participants to practice ASBI at their workplaces.  | Education, Modeling, Persuasion, Training |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |
|   |  | 5.6  | Information about emotional consequences                |   |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |
|   |  | 6.1  | Demonstration of the behaviour                          |   |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |
|   |  | 8.1  | Behaviour practice/rehearsal                            |   |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |
|   |  | 8.3  | Habit formation   |   |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |
|   |  | 15.1 | Verbal persuasion about capability                      |   |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |
|   |  | 15.3 | Focus on past success                                   |   |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |
|   | Outcome expectancies<br>Consequents  | 5.1  | Information about health consequences                   | Discussion on the severity of alcohol-related problems on the region participants are working. Evidence for the efficacy of of BIs for hazardous and harmful drinking and what is expected from PHC professionals. Ask participants to imagine conducting ASBI systematically hence contributing for patients having better health outcomes.  | Education, Persuasion                     |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |
|   |  | 5.3  | Information about social and environmental consequences |   |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |
|   |  | 16.2 | Imaginary reward  |   |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |
| Lack of opportunities for sharing experiences with other professionals  | Organisational culture /climate<br>Barriers and facilitators<br>Group conformity<br>Social comparisons | 6.2  | Social comparisons                                      | Inform participants about the SBI rates in each PHC unit. Group discussion on ASBI experiences. Presentation from an expert on alcohol addiction providing enough time for discussion and experience sharing  | Education, Modelling, Persuasion          |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |
|   |  | 9.1  | Credible source   |   |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |
| Belief that BIs are complex and counselling is difficult  | Perceived competence<br>Perceived behavioural control<br>Beliefs<br>Professional confidence            | 4.1  | Instruction on how to perform a behaviour               | Participants observed and participated in ASBI training simulations. Prompt participants to practice ASBI at their workplaces. Ask participants to register the two main benefits for patients and for professionals, and the two main barriers for implementing ASBI; promote a group discussion around their answers, enlightening the benefits and use evidence for arguing against the barriers. Prompt participants to imagine and compare what would be the future health outcomes of implementing and not implementing BIs, and what would be the the gains of systematically delivering BIs. Discussion on ease of delivering a BI. | Education, Modeling, Persuasion, Training |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |
|   |  | 6.1  | Demonstration of the behaviour                          |   |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |
|   |  | 8.1  | Behaviour practice/rehearsal                            |   |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |
|   |  | 8.3  | Habit formation   |   |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |
|   |  | 9.2  | Pros and cons   |   |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |
|   |  | 9.3  | Comparative imagining of future outcomes                |   |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |
|   |  | 15.1 | Verbal persuasion about capability                      |   |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |
|   |  | 16.2 | Imaginary reward  |   |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |
| Alcohol is not a priority;<br>Professionals are too busy dealing with other problems                                | Knowledge<br>Goal priority   | 5.1  | Information about health consequences                   | Discussion on the severity of alcohol-related problems on the region participants are working and that alcohol-related problems were selected as health priority. Ask participants to assess the degree of regret they would feel if they do not implement ASBI (thus not helping patients to achieve the best health outcomes). Evidence that professionals approve a systematic approach to alcohol problems.   | Education, Persuasion                     |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |
|   |  | 5.3  | Information about social and environmental consequences |   |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |
|   |  | 5.5  | Anticipated regret                                      |   |   |            |               |   |     |    |             |          |            |        |        |   |   |   |       |           |  |

Supplementary Material S1 (cont.). Description of the implementation programme: theoretical concepts underpinning the barriers to implementation and operationalization of the selected behaviour change techniques

|  |                               | Behaviour Change Techniques |   |  |  | CAPABILITY |               |   |     |    | OPPORTUNITY |          | MOTIVATION |        |        |   |   |   |           |    |  |
|--|-------------------------------|-----------------------------|---|--|--|------------|---------------|---|-----|----|-------------|----------|------------|--------|--------|---|---|---|-----------|----|--|
| Barriers   | Constructs                    | No.                         | Label   | Intervention Content   | Functions  | Physical   | Psychological |   |     |    | Social      | Physical | Reflective |        |        |   |   |   | Automatic |    |  |
|  |                               |                             |   |  |  | S          | K             | S | MAD | BR | SI          | EN       | B Cap      | B Cons | S/P ID | O | G | I | Reinf     | EM |  |
|  |                               | 6.3                         | Information about others' approval                      | Suggest (using evidence) that implementing ASBI will help professionals to achieve other objectives: better control of hipertensive patients, better control of diabetic patients, and also that it will also help to achieve the goals contractualized with the PHC units   |  |            |               |   |     |    |             |          |            |        |        |   |   |   |           |    |  |
|  |                               | 13.2                        | Framing / reframing                                     |  |  |            |               |   |     |    |             |          |            |        |        |   |   |   |           |    |  |
| Lack of screening and counselling materials          | Resources/material resources  | 7.1                         | Prompts / cues  | AUDIT screening tool, pens and patient handouts at the PHC professionals' desk;  | Enablement, Environmental restructuring  |            |               |   |     |    |             |          |            |        |        |   |   |   |           |    |  |
|  |                               | 12.5                        | Adding objects to the environment                       | Posters to display throughout PHC premisses  |  |            |               |   |     |    |             |          |            |        |        |   |   |   |           |    |  |
| Difficult to remember to screen systematically       | Memory                        | 2.2                         | Feedback on behaviour                                   | Periodically inform participants about the SBI rates in each PHC unit<br>Participants observed and participated in ASBI training simulations.<br>Prompt participants to practice ASBI at their workplaces.<br>Advise to minimize time spent performing ASBI by adopting a teamwork model: the receptionist gives the AUDIT to the patient; the patient fills in the AUDIT while waiting for the appointment; if positive, BI can be delivered by the family physician or by the family nurse.<br>AUDIT screening tool and patient handouts at the PHC professionals' desk.<br>Posters to display throughout PHC premisses. | Education, Enablement, Environmental restructuring, Modeling, Persuasion, Training |            |               |   |     |    |             |          |            |        |        |   |   |   |           |    |  |
|  |                               | 4.1                         | Instruction on how to perform a behaviour               |  |  |            |               |   |     |    |             |          |            |        |        |   |   |   |           |    |  |
|  |                               | 6.1                         | Demonstration of the behaviour                          |  |  |            |               |   |     |    |             |          |            |        |        |   |   |   |           |    |  |
|  |                               | 7.1                         | Prompts / cues  |  |  |            |               |   |     |    |             |          |            |        |        |   |   |   |           |    |  |
|  |                               | 8.1                         | Behaviour practice/rehearsal                            |  |  |            |               |   |     |    |             |          |            |        |        |   |   |   |           |    |  |
|  |                               | 8.3                         | Habit formation   |  |  |            |               |   |     |    |             |          |            |        |        |   |   |   |           |    |  |
|  |                               | 12.2                        | Restructuring the social environment                    |  |  |            |               |   |     |    |             |          |            |        |        |   |   |   |           |    |  |
|  |                               | 12.5                        | Adding objects to the environment                       |  |  |            |               |   |     |    |             |          |            |        |        |   |   |   |           |    |  |
| Alcohol SBI could damage doctor-patient relationship | Knowledge of task environment | 6.3                         | Information about others' approval                      | Evidence that the majority of patients approve being asked about alcohol   | Persuasion   |            |               |   |     |    |             |          |            |        |        |   |   |   |           |    |  |
|  | Beliefs                       | 4.4                         | Behavioural experiments                                 | Prompt participants to practice ASBI at their workplaces and to note patients' reactions   | Education, Enablement, Persuasion  |            |               |   |     |    |             |          |            |        |        |   |   |   |           |    |  |
|  |                               | 5.3                         | Information about social and environmental consequences | Evidence that patients do not get upset when asked about alcohol use, are willing to answer the AUDIT questions and would like to be advised if alcohol was to harm them   |  |            |               |   |     |    |             |          |            |        |        |   |   |   |           |    |  |

Supplementary Material S2. Description of the first module of the training programme

|              | Objectives   | Content   | Methodology  | Barriers addressed  | Behaviour Change Techniques applied                     | Time (minutes) |
|--------------|--|---|--|---|---|----------------|
| Introduction | To present the training and support programme  | Introduction  | Expository method  | Lack of support   | Social support (unspecified)                            | 30             |
|              | Introduction of trainers and participants  |   | Active method: ice breaking activity                     | Lack of opportunities for sharing experiences with other professionals  | Social comparisons                                      |                |
|              | Expectations of the training and support programme   |   |  |   |   |                |
|              | To understand the contribution of alcohol for the global disease burden                      | Global impact of alcohol consumption  | Expository method  | Lack of knowledge   | Information about health consequences                   | 10             |
|              | To be aware of alcohol as a substance causing harm to users and to others                    |   |  |   |   |                |
|              | To identify the differences between men and women concerning the metabolism of alcohol       |   |  |   |   |                |
|              | To know the average annual consumption of alcohol in Portugal                                |   |  |   | Information about social and environmental consequences |                |
|              | To relate the average daily consumption to the lifetime risk of dieing from alcohol use      |   |  |   |   |                |
|              | To relate the average daily consumption to the relative risk for alcohol-related diseases    |   |  |   |   |                |
|              | Questions and partial summary  |   | Interrogative method                                     | ---   | ---   |                |
|              |  |   | Expository method  |   |   |                |
|              | To know the national and local death rates for liver cirrhosis and transport accidents       | Impact of alcohol consumption in the Health Region of Dão Lafões<br><br>Primary care actions for reducing the impact of alcohol consumption | Expository method<br><br>Active method: group discussion | Lack of knowledge   | Information about health consequences                   | 15             |
|              | To recognize alcohol as a major contributor for liver cirrhosis and transport accidents      |   |  | Alcohol is not a priority   | Information about social and environmental consequences |                |
|              | To realize that alcohol is a local health priority   |   |  | Professionals' frustration and sense of low self-efficacy with unsuccessful attempts to counsel patients to cutdown | Antecipated regret                                      |                |
|              | To recognize delivery of alcohol SBI as a preventive activity for primary care professionals |   |  | Preventive health should be patients' responsibility  | Imaginary reward  |                |
|              | To know the evidence supporting the efficacy/effectiveness of alcohol SBI                    |   |  | Alcohol SBI are not effective   | Social comparisons                                      |                |
|              | To realize that alcohol SBI is a cost-effective activity when delivered in primary care      |   |  |   | Incompatible beliefs                                    |                |
|              | Questions and partial summary  |   | Interrogative method                                     | ---   | ---   |                |
|              |  |   | Expository method  |   |   |                |

|              | Objectives  | Content                  | Methodology                             | Barriers addressed                                 | Behaviour Change Techniques applied                     | Time (minutes) |
|--------------|---|--------------------------|---|--|---|----------------|
| Development  | To know the definition of standard drink  | Terminology              | Expository method                       | Lack of knowledge                                  | Information about health consequences                   | 15             |
|              | To understand the consumption of alcohol as a risk continuum  |                          |   |  |   |                |
|              | To know the "recommended drinking limits" for men and women as defined on the national guideline                          |                          | Interrogative method                    |  | Information about social and environmental consequences |                |
|              | To know the definition of low risk drinking, binge drinking, hazardous drinking, harmful drinking, and alcohol dependence |                          |   |  |   |                |
|              | Questions and partial summary   |                          | Interrogative method                    | ---  | ---   |                |
|              |   |                          | Expository method                       |  |   |                |
|              | To know that blood tests for diagnosing alcohol misuse have low sensitivity   | Screening for alcohol    | Expository method                       | Reliance on blood tests to diagnose alcohol misuse | Information about health consequences                   | 35             |
|              | To recognize AUDIT as the recommend screening questionnaire by the national guideline                                     |                          |   |  |   |                |
|              | To get familiar with the AUDIT questions  |                          | Demonstrative method                    | Lack of knowledge                                  | Information about social and environmental consequences |                |
|              | To know how to score the AUDIT questions  |                          |   |  | Instruction on how to perform a behaviour               |                |
|              | To know how to classify the risk level in accordance with the AUDIT scoring   |                          |   |  | Demonstration of the behaviour                          |                |
|              | To know the proper action depending on the AUDIT scoring, as recommended by the national guideline                        |                          |   |  |   |                |
|              | To watch a demonstration of how to apply the AUDIT  |                          |   |  |   |                |
|              | Questions and partial summary   |                          | Interrogative method                    | ---  | ---   |                |
|              |   |                          | Expository method                       |  |   |                |
| Coffee-break |   |                          |   |  |   |                |
| Development  | To practice screening with the AUDIT  | Screening with the AUDIT | Active method: clinical case discussion | Lack of training                                   | Behaviour practice / rehearsal<br>Habit formation       | 40             |
|              | Questions and partial summary   |                          | Interrogative method                    | ---  | ---   |                |
|              |   |                          | Expository method                       |  |   |                |

|  | Objectives  | Content       | Methodology                   | Barriers addressed                                     | Behaviour Change Techniques applied          | Time (minutes) |                                    |
|--|---|---------------|-------------------------------|--|--|----------------|------------------------------------|
|  | To understand simple advice as a simplified form of brief intervention                            | Simple advice | Expository method             | Lack of knowledge                                      | Instruction on how to perform a behaviour    | 80             |                                    |
|  | To watch a demonstration of how to deliver simple advice  |               | Demonstrative method          | Lack of training                                       | Demonstration of the behaviour               |                |                                    |
|  | To practice delivering simple advice  |               | Active method: role play      | BIs are complex and counselling is difficult           | Behaviour practice / rehearsal               |                |                                    |
|  |   |               | Questions and partial summary | Interrogative method                                   | BIs are complex and counselling is difficult |                | Habit formation                    |
|  |   |               |                               | Expository method                                      | Lack of time                                 |                | Verbal persuasion about capability |
|  | Lunch-break   |               |                               |  |  |                |                                    |
|  | To know that primary care professionals support alcohol SBI                                       |               | Expository method             | Lack of motivation/willingness to engage with drinkers | Information about others' approval           | 50             |                                    |
|  | To realize that primary care professionals believe that asking about alcohol is part of their job |               |                               |  |  |                |                                    |
|  | To know that primary care professionals believe they deliver alcohol SBI regularly                |               |                               |  |  |                |                                    |
|  | To realize that alcohol SBI are seldomly delivered  |               |                               |  |  |                |                                    |
| To find reasons for the contradiction why primary care professionals believe alcohol SBI rates are high when they are actually quite low |   |               |                               |  |  |                |                                    |
|  |   |               |                               |  |  |                |                                    |
|  |   |               |                               |  |  |                |                                    |
|  |   |               |                               |  |  |                |                                    |
|  |   |               |                               |  |  |                |                                    |
|  |   |               |                               |  |  |                |                                    |

Supplementary Material S2 (cont.). Description of the first module of the training programme

|            | Objectives   | Content                   | Methodology   | Barriers addressed  | Behaviour Change Techniques applied   | Time (minutes) |
|------------|--|---------------------------|---|---|---|----------------|
|            | <p>To be aware of the benefits for the patients and for health professionals of implementing alcohol SBI</p> <p>To be aware of the barriers hindering the implementation of alcohol SBI and how to overcome them</p> | Barriers and facilitators | <p>Active method: group work</p> <p>Expository method</p> | <p>Patients' misbeliefs about alcohol</p> <p>Lack of structured action protocol</p> <p>Lack of screening and counselling materials</p> <p>Lack of support</p> <p>Professionals believe that alcohol SBI are not effective / patients will not follow the advice to cutdown</p> <p>Alcohol is not a priority</p> <p>Professionals are too busy dealing with other problems</p> <p>Lack of time</p> <p>Frustration and sense of low self-efficacy with unsuccessful cases</p> <p>Belief that BIs are complex and counselling is difficult</p> <p>Difficult to remember to screen systematically</p> <p>Alcohol SBI could damage doctor-patient relationship</p> | <p>'Instruction on how to perform a behaviour</p> <p>Adding objects to the environment</p> <p>Problem solving</p> <p>Action planning</p> <p>'Prompts / cues</p> <p>'Social support (unspecified)</p> <p>'Information about others' approval</p> <p>Framing / reframing</p> <p>'Imaginary reward</p> <p>Restructuring the social environment</p> <p>'Comparative imagining of future outcomes</p> <p>'Information about emotional consequences</p> <p>Focus on past success</p> <p>Habit formation</p> | 150            |
| Conclusion | To summarize the first training session  | Final summary             | Interrogative method                                      | ---   | ---   | 10             |
|            |  |                           | Expository method   |   |   |                |
|            |  | Conclusion                | Expository method   |   |   |                |



Supplementary Material S3. Description of the second module of the training programme

|   | Objectives   | Content                                      | Methodology   | Barriers addressed   | Behaviour Change Techniques applied   | Time (minutes) |
|---|--|--|---|--|---|----------------|
| Introduction  | To review the contents of the first training day   | Introduction                                 | Expository method   | ---  | ---   | 15             |
|   | To present the contents of the second training day   |  | Interrogative method  |  |   |                |
| Development   | To present the alcohol SBI rates in each PHC unit  | Implementation efforts                       | Active method: group discussion<br>Expository method              | Lack of opportunities for sharing experiences with other professionals | Problem solving   | 90             |
|   | To allow participants to discuss implementation difficulties   |  |   | Lack of training   | Action planning   |                |
|   |  |  |   | Lack of incentives   | Feedback on behaviour   |                |
|   |  |  |   | Lack of structured action protocol                                     | Social comparisons  |                |
|   |  |  |   | Lack of motivation/willingness to engage with drinkers                 | Social reward   |                |
|   | To find solutions for the difficulties encountered   |  |   | Difficult to remember to screen systematically                         | Verbal persuasion about capability  |                |
|   | Coffee-break   |  |   |  |   |                |
|   | To know the different types of brief interventions   | Brief intervention<br>Transtheoretical Model | Expository method<br>Interrogative method<br>Demonstrative method | Lack of knowledge  | Instruction on how to perform a behaviour                                   | 120            |
|   | To understand the five major steps to a brief intervention: Ask, Advise, Assess, Assist, and Arrange |  |   | Lack of training   | Demonstration of the behaviour  |                |
|   | To know the Transtheoretical Model of behaviour change   |  |   | Lack of structured action protocol                                     | Habit formation   |                |
| To integrate the Transtheoretical Model into the brief intervention steps                                 | Belief that BIs are complex and counselling is difficult   |  |   | Graded tasks   |   |                |
| To understand how to tailor the approach to the patient taking into account the patient's stage of change |  |  |   |  |   |                |
| Questions and partial summary   |  | Interrogative method<br>Expository method    | ---   | ---  |   |                |
| Lunch-break   |  |  |   |  |   |                |
|   |  |  |   |  |   |                |
|   | To understand the principles of motivational   |  | Expository method   | Lack of knowledge<br>Lack of training                                  | Instruction on how to perform a behaviour<br>Demonstration of the behaviour |                |

Supplementary Material S3 (cont.). Description of the second module of the training programme

|            | Objectives   | Content                   | Methodology   | Barriers addressed   | Behaviour Change Techniques applied   | Time (minutes) |
|------------|--|---------------------------|---|--|---|----------------|
|            | interviewing<br><br>To know the major techniques of motivational interviewing (OARS skills)<br><br>To learn how to use the OARS skills for helping patients changing their behaviour | Motivational Interviewing | Interrogative method<br><br>Demonstrative method<br><br>Active method: group work and role play | Lack of training<br><br>Belief that BIs are complex and counselling is difficult<br><br>Lack of time<br><br>Lack of opportunities for sharing experiences with other professionals | Behaviour practice / rehearsal<br><br>Habit formation<br><br>Graded tasks<br><br>Verbal persuasion about capability<br><br>Social comparisons | 200            |
| Conclusion | To summarize the second training session   | Final summary             | Interrogative method<br>Expository method   | ---  | ---   | 10             |
|            |  | Conclusion                | Expository method   |  |   |                |

|              | Objectives  | Content  | Methodology                     | Barriers addressed  | Behaviour Change Techniques applied       | Time (minutes) |
|--------------|---|--|---------------------------------|---|---|----------------|
| Introduction | To review the contents of the first and second training days    | Introduction                                     | Expository method               | ---   | ---                                       | 15             |
|              | To present the contents of the third training day               |  | Interrogative method            |   |   |                |
| Development  | To improve the OARS skills                                      | Brief Intervention<br><br>Transtheoretical Model | Active method: group discussion | Lack of opportunities for sharing experiences with other professionals  | Instruction on how to perform a behaviour | 90             |
|              | To tailor the OARS skills to the stage of change of the patient |  | Expository method               | Lack of knowledge   | Demonstration of the behaviour            |                |
|              |   |  | Interrogative method            | Lack of training  | Behaviour practice / rehearsal            |                |
|              |   |  | Demonstrative method            | Belief that BIs are complex and counselling is difficult  | Habit formation                           |                |
|              |   |  |                                 | Professionals' frustration and sense of low self-efficacy with unsuccessful attempts to counsel patients to cutdown | Graded tasks                              |                |
|              |   |  |                                 | Information about emotional consequences  | Social comparisons                        |                |
|              |   |  |                                 | Comparative imagining of future outcomes  | Verbal persuasion about capability        |                |
|              |   |  |                                 | Focus on past success   |   |                |
|              | Questions and partial summary                                   |  | Interrogative method            | ---   | ---                                       |                |
|              |   |  | Expository method               |   |   |                |
|              | Coffee-break  |  |                                 |   |   |                |
|              |   |  |                                 |   | Instruction on how to perform a behaviour |                |
|              |   |  |                                 |   | Demonstration of the behaviour            |                |
|              |   |  |                                 | Lack of opportunities for sharing experiences with other professionals  | Behaviour practice / rehearsal            |                |
|              |   |  |                                 | Lack of knowledge   | Habit formation                           |                |
|              |   |  | Interrogative method            |   | Graded tasks                              |                |

Supplementary Material S4 (cont.). Description of the third module of the training programme

|            | Objectives  | Content  | Methodology                                 | Barriers addressed  | Behaviour Change Techniques applied                     | Time (minutes) |
|------------|---|--|---|---|---|----------------|
|            | To improve the OARS skills                                      | Brief Intervention<br><br>Transtheoretical Model | Interrogative method                        | Lack of training<br><br>Professionals' frustration and sense of low self-efficacy with unsuccessful attempts to counsel patients to cutdown<br><br>Belief that BIs are complex and counselling is difficult | Graded tasks  | 120            |
|            | To tailor the OARS skills to the stage of change of the patient |  | Demonstrative method                        |   | Information about emotional consequences                |                |
|            |   |  | Active method: group work, group discussion |   | Social comparisons                                      |                |
|            |   |  |   |   | Social reward   |                |
|            |   |  |   |   | Comparative imagining of future outcomes                |                |
|            |   |  |   |   | Verbal persuasion about capability                      |                |
|            |   |  |   |   | Focus on past success                                   |                |
|            | Questions and partial summary                                   |  | Interrogative method                        | ---   | ---   |                |
|            |   |  | Expository method                           |   |   |                |
|            | Lunch-break   |  |   |   |   |                |
|            | To understand the concept of alcohol dependence                 | Alcohol dependence                               | Expository method                           | Lack of knowledge   | Information about health consequences                   | 200            |
|            | To know how to diagnose alcohol dependence                      |  | Interrogative method                        | Lack of training  | Information about social and environmental consequences |                |
|            |   |  | Demonstrative method                        | Reliance on blood tests to diagnose alcohol misuse  |   |                |
|            | To understand the principles for treating alcohol dependence    |  | Active method: group discussion             | Lack of support services  | Social support (unspecified)                            |                |
|            |   |  |   | Lack of opportunities for sharing experiences with other professionals  | Credible source   |                |
| Conclusion | To summarize the third training session                         | Final summary                                    | Interrogative method                        | ---   | ---   | 10             |
|            |   |  | Expository method                           |   |   |                |
|            |   | Conclusion                                       | Expository method                           |   |   |                |

Supplementary Material S5. Description of the fourth module of the training programme

|              | Objectives  | Content  | Methodology                                | Barriers addressed  | Behaviour Change Techniques applied  | Time (minutes) |
|--------------|---|--|--|---|--|----------------|
| Introduction | To review the contents of the previous three training days      | Introduction                                     | Expository method                          | ---   | ---  | 15             |
|              | To present the contents of the fourth training day              |  | Interrogative method                       |   |  |                |
| Development  | To improve the OARS skills                                      | Brief Intervention<br><br>Transtheoretical Model | Active method: group discussion of a video | Lack of opportunities for sharing experiences with other professionals<br><br>Lack of knowledge<br><br>Lack of training | Instruction on how to perform a behaviour<br><br>Demonstration of the behaviour<br><br>Habit formation<br><br>Graded tasks<br><br>Social comparisons | 90             |
|              | To tailor the OARS skills to the stage of change of the patient |  |  |   |  |                |
|              | Questions and partial summary                                   |  |  |   |  |                |
|              | Coffee-break  |  |  |   |  |                |
|              |   |  |  |   |  |                |
|              |   |  |  | Lack of opportunities for sharing experiences with other professionals  | Instruction on how to perform a behaviour  |                |

|            | Objectives  | Content  | Methodology                                   | Barriers addressed   | Behaviour Change Techniques applied   | Time (minutes) |
|------------|---|--|---|--|---|----------------|
|            | To improve the OARS skills                                      | Brief Intervention<br><br>Transtheoretical Model | Interrogative method                          | Lack of knowledge  | Demonstration of the behaviour  | 120            |
|            | To tailor the OARS skills to the stage of change of the patient |  | Active method: group work, group discussion   | Lack of training   | Behaviour practice / rehearsal  |                |
|            |   |  |   | Belief that BIs are complex and counselling is difficult   | Habit formation   |                |
|            |   |  |   |  | Graded tasks  |                |
|            |   |  |   |  | Social comparisons  |                |
|            | Questions and partial summary                                   |  | Interrogative method<br><br>Expository method | ---  | ---   |                |
|            | Lunch-break   |  |   |  |   |                |
|            | To practice alcohol screening and brief interventions           | Screening<br><br>Brief interventions             | Active method: group work, role play          | Lack of training<br><br>Lack of time<br><br>Lack of opportunities for sharing experiences with other professionals | Behaviour practice / rehearsal<br><br>Habit formation<br><br>Graded tasks<br><br>Social comparisons<br><br>Verbal persuasion about capability | 200            |
| Conclusion | To summarize the training course                                | Final summary                                    | Interrogative method                          | ---  | ---   | 10             |
|            |   |  | Expository method                             |  |   |                |
|            |   | Conclusion                                       | Expository method                             |  |   |                |